

Navistar, Inc. 2701 Navistar Drive Lisle, IL 60532 USA

October 28, 2020

Mr. Derek Tarver Bowman Brooke 1441 Main St. Suite 1200 Columbia, SC 29201

Mr. Tarver,

I have been asked to comment on various portions of Mr. Jay Zembower's expert report in the matter of Pauling v. IDeliverTL.

Materials that I have reviewed:

- Matter Compliant
- Michael Pauling Deposition (May 20, 2020)
- Ms. Gillian Isom Deposition (September 9, 2019)
- Mr. Tony Isom Deposition (August 11, 2020)
- Mr. Sammie McCloud Deposition (September 9, 2019)
- Mr. William Black Deposition, 30(b)(6) for National Fleet Management (July 6, 2020)
- Ms. Teri Jones Deposition, 30(b)(6) for Navistar, Inc. (September 14, 2020)
- Mr. Roy Zeitlow Deposition, 30(b)(6) for Navistar, Inc. (September 15, 2020)
- Video of Exemplar Tractor Evaluations
- Federal Motor Vehicle Safety Standard (FMVSS) §571.121 (Standard No. 121; Air Brake Systems) – October 1, 2010 Revision
- Federal Motor Carrier Safety Regulations Pocketbook April 2017 (includes all revisions effective on or before March 1, 2017)
- Subject vehicle material information (lineset ticket)
- ProStar Standard Chassis Specification (August 2011)
- ProStar Operator's Manual
- ProStar Component Book
- Subject Vehicle Driver Control Module Brake Valve Drawing Part number 3625334F94
- Exemplar Tractor material information (lineset ticket)
- Exemplar Vehicle Driver Control Module Brake Valve Drawing Part number 3625336F95
- Driver Control Module Mounting Installation Diagram
- Accident Report
- SC DOT Inspection Report
- National Fleet Management records

My Background

I have been employed by Navistar for more than 28 years as a Manager and Engineer. I have been a Senior Product Integrity Engineer since 2009. I graduated from the LeTourneau University in 1992 with a Bachelor of Science in Engineering with Mechanical Emphasis. Since then I have held successive positions in the Brake Group as a Brake System Design Engineer, Brake System Test Engineer, Brake System Manager, Chassis PDT (Product Development Team) Leader, and as a Brake System Functional Expert guiding the Global Brake System Groups (ECE and ADR). As a Brake System Manager, one of my projects was to lead a group of engineers and designers in the development of the ProStar brake system (which includes the parking brake system) from concept development to prototype builds and testing to vehicle production. See my CV in Attachment A.

In my position within the Product Integrity Group, I am on occasion asked to provide Corporate Representation and Expert testimony. See my testimony history in Attachment B. I am compensated in this capacity as an ordinary employee.

ProStar Parking Brake System

The parking brake system on the ProStar tractor is designed to hold the vehicle in a stationary position and to serve as an emergency brake system if need be. The components of the parking brake system consist of:

- Air Reservoirs to supply air to the Spring Brake chambers.
- Parking Brake Control Valve Bendix MV-3 Valve. This push/pull functioning valve is used to release the spring brake chamber when the knob is pushed in (disengage the parking brake) and apply the spring brake chamber when the knob is pulled out (engage the parking brake). The yellow diamond shaped knob controls the parking brakes on the tractor and the red octagon shaped knob controls the parking brakes on the trailer.
- Spring Brake Chambers. These are canisters attached to the tractor's rear axles and the trailer's axles that house a large spring that applies the brake to keep vehicle parked. When the yellow (for the tractor) and red (for the trailer) knob is pushed in, air enters the canister to compress the large spring which releases the parking brakes, so the vehicle can move. When the knobs are pulled out, air is removed from the canisters and the large spring applies the brakes, so the vehicle will remain parked.
- Tractor Protection Valve Bendix TP-5 Valve. This valve is used to provided air to the trailer's service brake and parking brake to apply or release.
- Tractor-to-Trailer Connections (pigtails). There are two color coded pneumatic connections between the tractor and the trailer though a device called a glad-hand.¹

¹ There is also a third electrical connection referred to as a pigtail. This is not at issue in the matter.

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- The blue connection provides air for the trailer's service brake. This is controlled by the operator's foot brake pedal.
- The red connection provides air to disengage and engage the trailer's parking brake. It also provides air for the trailer's air reservoir. This is controlled by the red octagon shaped knob of the parking brake control valve.
- Various tubing and fittings to connect the above-mentioned components together.

The design of the service brake system and parking brake system are governed by the Federal Motor Vehicle Safety Standard (FMVSS) 121 and the Federal Motor Carrier Safety Regulations (FMCSR) is section 393 Subpart C. These provide general guidelines such as air reservoir sizes, low warning signals, stopping distance, stability, parking capability and functionality.

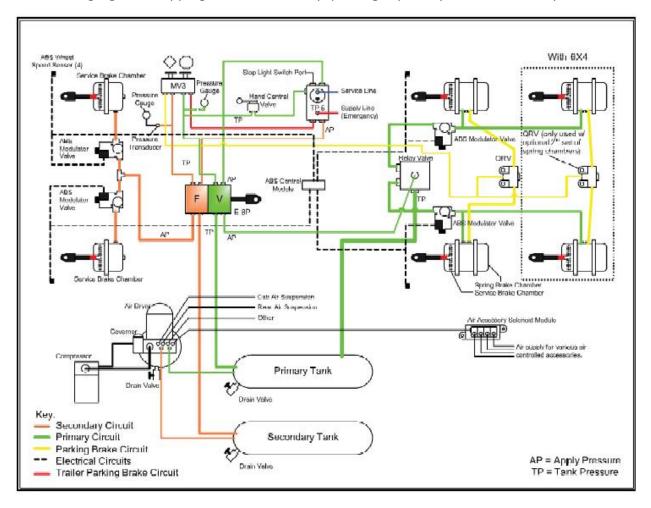


Figure 1. ProStar Air Brake System Schematic.

Figure 1 shows the schematic for the ProStar Air Brake System. The primary and secondary reservoirs are filled with air from the air compressor through the air dryer which removes moisture from the air. When the air reservoir pressure reaches cut out pressure (approximately 130 psi), the governor will communicate to the compressor to stop building air. When the

pressure in the air reservoirs drop approximately 15 psi to 115 psi, the governor will signal the compressor to replenish the air reservoirs to cut out pressure.

The air reservoirs, air gauges, and low-pressure warning are all design requirements found in FMVSS-121. The low air pressure warnings (visual and/or audible) are to be activated anytime a reservoir is below 60 psi.

There is an internal double check valve that will supply air to the corresponding spring brake chambers from the reservoir that has the highest pressure (based on which knobs are pushed in). As required by FMVSS-121, if the one of the reservoirs should contain a leak, the other reservoir shall maintain its pressure and supply the air to the spring brake chambers to allow the vehicle to be able to pull to the side of the road safely to determine the nature of the leak. As required in FMCSR 393.43, if a leak causes air pressure in both reservoirs on the tractor to drop down between 20 and 35 psi, the knobs on the parking brake control should automatically pop out.

Assuming a trailer is hooked up to the tractor, the red knob can be pushed in to supply air through the tractor protection valve to disengage the trailer parking brakes and to the trailer reservoir that is used during service brake stopping. To begin a trip in a tractor-trailer combination, the tractor's air brake system must be able to generate and sustain sufficient air pressure, and the driver must be able to push in the yellow knob to disengage the tractor's parking brakes and the red knob to disengage the trailer's parking brake.

To park the vehicle combination, the yellow knob can be pulled out. This will park both the tractor and trailer as required by FMVSS-121 Section 5.6.4. If just the red knob is pulled out, only the trailer parking brakes will be applied. The yellow knob will still need to be pulled out to the apply the parking brakes of the tractor.

Exemplar Vehicle Testing

On August 25, 2020, I conducted testing on an exemplar 2016 ProStar+ 122 6x4, which was video recorded and is included with this report. See Attachment C. I chose this vehicle due to the following brake system components being the same as the subject tractor, as shown in the vehicles' lineset tickets in Attachment D:

- Model Vehicle (essentially identical)
- Bendix BA-921 15.9 CFM Air Compressor
- Bendix AD-IS Air Dryer
- 6054 cubic inch air reservoir volume
- Type 24 Front Air Chamber
- Type 30/30 Rear Air Chambers
- Anti-lock Brake System
- Bendix MV-3 Park Control Valve
- Bendix TP-5 Tractor Protection Valve.

Brake Tubing Specification.

<u>Test 1</u>: This evaluation was to examine the charging system (or compressor) building air pressure to compressor cut-out pressure (approximately 130 psi), disengage the tractor parking brakes (pushing in the yellow knob) of the parking brake control valve, and then draining the pressure from the air tanks to examine 1) the air pressure gauge, low pressure warning light and low pressure audible warning; and 2) the reaction of the parking brake control valve due to decreasing pressure in the air reservoirs.

<u>Conclusion</u>: The exemplar vehicle was compliant with applicable FMVSS and FMCSR requirements of low pressure warning activating above 60 psi, the parking brakes did not engage (knob popping out) with one reservoir nearly empty. The knob popped out, engaging the parking brake, when the second reservoir was between 15 and 40 psi.

<u>Test 2</u>: This evaluation was to examine the charging system (or compressor) building air pressure to compressor cut-out pressure (approximately 130 psi), releasing the tractor parking brakes (pushing in the yellow knob) and the trailer brake (pushing in the red knob) of the parking brake control valve, and then draining the pressure from the air tanks to examine 1) the air pressure gauge, low pressure warning light and low pressure audible warning; and 2) the reaction of the parking brake control valve due to decreasing pressure in the air reservoirs.

<u>Conclusion</u>: The exemplar vehicle was compliant with applicable FMVSS and FMCSR requirements of low pressure warning activating above 60 psi, the tractor and trailer's parking brakes did not engage (knob popping out) with one reservoir nearly empty. The knobs popped out, engaging the tractor and trailer parking brakes, when the second reservoir was between 15 and 40 psi.

<u>Test 3</u>: This evaluation was to examine the effects on the air brake system with various mounting screws removed from the tractor parking brake control valve. The screws were removed one at a time and the tractor parking brake valve (yellow knob) was pulled out and then pushed in to evaluate functionality. This sequence was repeated until all four mounting screws were removed.

<u>Conclusion</u>: The tractor parking brakes could be engaged and disengaged without issue until all four screws were missing. When all four screws were removed, the parking control valve was unstable and could not be pushed in to disengage the parking brake. No leak was observed due to mounting screws missing. The only air pressure consumed was that required to refill the parking brake chambers when the yellow control knob was pushed in. No low pressure visual or audible warnings were observed during this test.

<u>Test 4</u>: This evaluation was to determine if the parking brake control valve could be pushed in to disengage the parking brake with all four screws missing and with the bezel installed. Note that in test 3, the bezel was removed to access the four parking brake control valve mounting screws.

• <u>Conclusion</u>: When all four screws were removed and the bezel installed, the parking control valve was unstable and could not be pushed in to disengage the parking brake. In this condition the tractor could not be driven.

<u>Test 5</u>: This evaluation was to examine the effects on the air brake system with various mounting screws removed from the tractor and trailer parking brake control valve. The screws were removed one at a time and the tractor parking brake valve (yellow knob) and trailer parking brake control valve (red knob) were pulled out and then pushed in to evaluate functionality. This sequence was repeated until all four mounting screws were removed.

Also, during this test, once all four mounting screws were removed, the vehicle was left running in this condition with the parking brakes disengaged for over 30 minutes. During this portion of the test, the air pressure in the tractor's reservoirs remained at operational levels.

<u>Conclusion</u>: The tractor parking brakes and trailer parking brakes could be engaged and disengaged without issue until all four screws were missing. When all four screws were removed, the parking control valve was unstable and neither knob could be pushed in to disengage the parking brakes. No leak was observed due to mounting screws missing. The only air pressure consumed was that required to refill the parking brake chambers when the yellow and red control knobs were pushed in. No low pressure visual or audible warnings were observed during this test.

<u>Test 6</u>: This evaluation was to examine the effects on the air brake system when a leak was created between the tractor and the trailer, by simulating a leak at the connection or in the trailer. Once the tractor's reservoirs were at operational levels and both parking brake control knobs were pushed in, the "red" glad-hand connection between the tractor and the trailer was opened to simulate a leak at the connection or in the trailer. During the test, the leak was such that the air compressor could not overcome the leak and the air reservoirs decreased in pressure. Once the air reservoirs were depleted to levels just below the low-pressure warning, the tractor protection system popped out the red parking brake control valve knob to protect the integrity of the tractor air system.

During test 6, when the leak was created there was an audible movement of air through the trailer portion of the parking brake control valve, followed by the lower pressure warning signal, prior to the knob popping out, as described by Sammie McCloud in his deposition.

• <u>Conclusion</u>: Based on this test, and the testimony of Sammie McCloud, it is to a reasonable degree of mechanical certainty that the loss of air pressure in the subject tractor originated outside of the tractor, in either the trailer connection or trailer itself.

Matter Testimony

Mr. Tony Isom (August 11, 2020):

- Cedrick Woods was to be the driver the truck, did the inspection of the truck for Mr. Isom and went on a test drive. (Page 15, Line 1)
- Stancil Myers drove vehicle from the dealership to "Shrimp Boat." (Page 19, Line 24 to Page 20, Line 8)
- Sammie McCloud test drove tractor. (Page 21, Line 1-3)
- After the wreck, Sammie drove the truck back to Blacksburg without the trailer. (Page 29, Line 17-21)
- The next day, Sammie drove the truck to National Fleet Management. (Page 29, Line 25 to Page 30, Line 2)
- In the test drives that Mr. Isom was a part of, he did not note any looseness of the brake valves. (Page 48, Line 25 to Page 49, Line 2)
- None of the operators of the truck expressed any issues with Brake valves. (Page 59, Line 25 to Page 61, Line 1).
- After the truck was received back from National Fleet and hook up a trailer, it never experienced a loss of air pressure. (Page 65, Line 25 to Page 66, Line 4)
- The only time a leak occurred was with the G & P trailer. (Page 62, Line 23 to Page 63, Line 8)

Mr. Sammie McCloud (September 9, 2019):

- Test drove the vehicle with no issues. (Page 34, Line 18 to Page 35, Line 14)
- Discusses disengaging the tractor parking brake to evaluate tractor/trailer attachment. (Page 49, Line 5-7)
- Prior to the accident, Mr. McCloud heard air running through the trailer parking brake control valve on the parking brake control valve. (Page 57, Line 11-13)
- Mr. McCloud testified that the issue was with the trailer brakes. (Page 58, Line 25 to Page 59, Line 1 and Page 71, Line 3-8)
- Mr. McCloud described that when the trailer malfunctioned prior to the accident, the trailer brake control popped out slowing the vehicle down. (Page 59, Line 12-17)
- Mr. McCloud stated the low-pressure warning sounded prior to the accident. (Page 61, Line 11-20)
- Mr. McCloud stated he drove the truck back to Blacksburg, SC after trailer was disconnected. (Page 77, Line 13-21)
- Testified there was no issue with the Tractor brakes after the incident (Page 78, Line 4-8)

Mr. William Black (July 6, 2020)

- Mr. Black testified that missing screws would prevent the tractor parking brakes from being disengaged. (Page 32, Lines 3-23)
- Mr. Black testified about the use of a gladhand plugged off to simulate trailer supply. (Page 86, Line 1-21)
- The Annual Vehicle Inspection Report conducted by National Fleet on the subject vehicle confirmed that it complied with all CFR Regulations in December 2017, including as to the brake system. (Page 91, Line 17 to Page 92, Line 14)

Discussion

Mr. Zembower in his report states that "the dash control valve became detached from its location on the dashboard and fell into the dash while driving and released the trailer supply pressure and applied the trailer brakes causing the entire unit to slow in speed. In addition, it is highly unlikely that all four retaining fasteners suddenly all became detached and allowed the control valve to fall into the dash, it most certainly became loose over time and would be evident to those properly trained as being abnormal." Mr. Zembower obviously believes that all four mounting screws fell out causing the loss of air pressure. However, it is unclear whether Mr. Zembower is opining 1) that the parking brake control valve sustained a leak or 2) closed due to forces incurred when the parking brake control valve allegedly "fell into the dash."

As to possible opinion number 1, I disagree that the parking brake control valve sustained a leak at any time prior to or during the incident. The testing I performed conclusively shows that no number of missing screws will cause a leak in the air brake system. Rather, the testing indicates to a high degree of mechanical certainty that the loss of air pressure in this case originated outside of the tractor, at the tractor-trailer connection or in the trailer itself.

As to possible opinion number 2, I disagree that the parking brake control valve closed when it "became detached from its location on the dashboard and fell into the dash" for several reasons.

1) Sammie McCloud heard air moving through the valve prior to the knob popping out. If the parking brake is applied (knob being pulled out) there will only be short burst of air that heard – not continuous air flow.

2) Sammie McCloud testified that the low-pressure warning alarm sounded. If the parking brake is applied, the alarm will not sound.

3) There is no evidence that the parking brake control valve fell into the dash during the incident.

4) If the parking brake control valve fell into the dash during the incident.

4) If the parking brake control valve fell into the dash the truck would be undrivable. The truck was driven after this accident multiple times.

5) Based on testing, the parking brake control valve falling into the dash will not generate sufficient force to mechanically close the valve.

While there are reports the four parking brake control valve mounting screws were replaced, it is unknown if all four were missing, and if so when or why they became missing. I do agree that if the valve was loose it "would be evident to those properly trained as being abnormal." If fact, at least 5 CDL qualified drivers drove this vehicle from December 2017 to February 2018. None

of them reported a loose parking brake control valve. The table below identifies the number of the times drivers of the Isom truck disengaged the parking brake by pressing in the parking brake control valve before the accident. As can be seen this valve was actuate at least 18 times before the accident and another 4 times after the accident with no mention of looseness or any other concerns. The valve would have also been actuated more than 10 time while in the UTC/National Fleet possession.

Description of Drive	Tractor Parking (Yellow)		Trailer Parking (Red)	
	Push In	Pull Out	Push In	Pull Out
Transport from UTC to National Fleet	Yes	Yes		
Vehicle driven into National Fleet shop	Yes	Yes		
National Fleet Inspection	Yes	Yes		
Vehicle driven out of National Fleet shop	Yes	Yes		
Transport from National Fleet to UTC	Yes	Yes		
Mr. Wood's Test Drive	Yes	Yes		
Mr. Myers from UTC to Storage Location	Yes	Yes		
Mr. McCloud Test Drive	Yes	Yes		
Mr. McCloud Drive to First Load Pick-up	Yes			
Drive to Trailer after waiting 1 hour		Yes		
Connect to Trailer and fill tanks	Yes	Yes	Yes	
Test Tractor/Trailer Connection	Yes			Yes
Drive to Fueling Stations			Yes	
Fuel Vehicle		Yes		Yes
Continue with route	Yes		Yes	
From tow-yard to storage location	Yes	Yes		
From storage location to National Fleet	Yes	Yes		

Conclusions

Based on my training and education, my involvement in the development of this brake system, my review the record, and testing performed on an exemplar tractor, to a reasonable degree of mechanical certainty, I conclude the following:

- The Parking Brake Valve operated as it was designed and as required by federal regulations.
- Missing Parking Brake Valve mounting screws do not create a leak or loss of air pressure in the parking brake system of the tractor or the trailer.
- A tractor-trailer cannot be driven if all parking brake control valve mounting screws are
 missing, as alleged by plaintiff, because the driver cannot disengage the parking brakes.
 A tractor-trailer can be driven with up to two or three missing parking brake control valve
 mounting screws, although this condition would be noticeable to a trained CDL driver.

- The loss of air pressure in this case likely originated in the trailer.
 - Testing has shown that when there is a leak between the tractor and the trailer or somewhere in the trailer that the compressor cannot keep up with, air will be heard flowing through the parking brake control valve, followed by the lowpressure warning signal, prior to the red knob popping out, as described by Sammie McCloud.
 - Prior to being connected to the G & P trailer, the tractor never experienced issues with its air brake system. After the trailer was disconnected, Sammie McCloud continued to drive the tractor without issue. National Fleet Management was unable to replicate a loss of air pressure in the tractor's air brake system.
- The Parking Brake Valve did not fall into the dash causing the trailer parking brake to apply. There is no evidence that the parking brake valve fell into the dash or was even loose. Sammie McCloud continued to drive the tractor after the accident. This means that the Parking Brake Control Valve was operational for the driver in his seated position.

I reserve the right to amend this report if additional information becomes available.

Sincerely,

Roy S. Zeitlow

Senior Product Integrity Engineer

Ray S. Zida

Navistar, Inc.

7:19-cv-00206-JD Date Filed 10/30/20 Entry Number 64-1 Page 11 of 30

Attachment A

Curriculum Vitae

Roy S. Zeitlow Senior Product Integrity Engineer Navistar, Inc.

EMPLOYMENT HISTORY

Senior Product Integrity Engineer

2009-current

Navistar, Inc., Lisle, IL

- Provide technical assistance and coordination of field investigations of product issues.
- Provide feedback to engineering for design improvements.
- Assist in the defense of the corporation in product warranty claims and product liability lawsuits.

Brake System Functional Expert

2008-2009

Navistar, Inc., Fort Wayne, IN

- Provide guidance for Global Brake Systems (ECE and ADR)
- Develop test plan for Global Brake System. Worked with outside technical organization to have testing witnessed.
- Provide consultation on implementation and validation of stability systems on International product.
- Provided brake compliance documentation package for Military products working with test group, technical legislation and outside consultant.

Chassis System PDT Leader

2007-2008

Navistar, Inc., Fort Wayne, IN

- Liaison between product centers and chassis engineering for Severe Service and Heavy Duty product design programs.
- Most emphasis on 5000 refresh programs to meet new customer requests.

Brake System Manager

1999-2007

Navistar, Inc., Fort Wayne, IN

- PDT leader for NGV brake system team.
- Implemented the ProStar brake system design.
- Updated brake compliance documentation for all models.
- Supervised (completed TPMs, JPAs) for up to 6 employees.

Brake System Test Engineer

1994-1997

Navistar, Inc., Fort Wayne, IN

- Wrote test procedures, evaluation test data, and wrote test reports.
- Maintain close contact with design and supplier community to improve brake system designs.
- Validated plant engineering design for compliance with Federal regulations.

Brake System Design Engineer

1992-1994

1997-1999

Navistar, Inc., Fort Wayne, IN

- Design air brake charging system plumbing (Air compressor to the air reservoirs).
- Design foundation brake packages. Checked clearance to other component during articulation.
- Interface with manufacturing plant and suppliers.

Page 1 Updated: October 16, 2020

Master of Science: Management Indiana Wesleyan University, Marion, IN Bachelor of Science: Engineering with Mechanical Concentration LeTourneau University, Longview, TX 1992

SEMINARS & TRAINING

- Heavy Vehicle Crash Reconstruction, Northwestern University Center for Public Safety (2011)
- Traffic Crash Reconstruction II, Northwestern University Center for Public Safety (2011)
- Traffic Crash Reconstruction I, Northwestern University Center for Public Safety (2010)
- Vehicle Braking Performance: Stopping Distance, SAE (2010)
- Global 8D Training, International Truck & Engine Co. (2004)
- Managing Technical Professionals, American Management Association (2001)
- Project Management, The George Washington University School of Business (2006)
- Value Management, Value Analysis Incorporated (2008)
- Automotive Assembly Work Measurement Course, International University (2007)
- Design Failure Mode Effects Analysis (1999)
- Meritor Foundation Brakes (1999)
- Brake Performance for Heavy Commercial Vehicles, Radlinski (1999)
- The 43rd L. Ray Buckendale Lecture: Commercial Vehicle Braking Systems: Air Brakes, ABS and Beyond by Leonard C. Buckman (1998)
- AlliedSignal (Bendix) Air Brake System Training (1996)
- Design of Experiments Using Taguchi Approach, Nutek, Inc. (1996)
- Foundation Brake Training by Carlisle (1996)
- Problem Solving Decision Making, Navistar (1995)
- Miscellaneous Navistar Unique Training (Team building, Culture, BOM Structure etc.)

PATENTS

- Shared Patent: 6,007,159 Park Brake Lock-in Key Switch System for Vehicle Air Brake System (1998)
- Shared Patent: 6,234,586 Park Brake Lock-in Key Switch System for Vehicle Air Brake System (1999)

PROFESSIONAL ASSOCIATIONS

- Society of Automotive Engineers (SAE), Member
 - Truck and Bus Brake Actuator Committee
 - Truck and Bus Electronically Controlled Brake System Committee (past)
 - Truck and Bus Foundation Brake committee, Chairman
 - Truck and Bus Stability Control Systems Committee (past)

Page 2 Updated: October 16, 2020

7:19-cv-00206-JD Date Filed 10/30/20 Entry Number 64-1 Page 14 of 30

Attachment B

Roy S. Zeitlow Testimony

DATE	NAME	COURT	EXPERT (E) CO REP (R)
6/28/10	Cynthia Jones	State Trial Court Third Judicial Court 05L000741 Madison IL	R (dep)
3/1/11	Charles Boyd	State Trial Court State Court of Chatham County State of Georgia STCV 09 04 928	R (dep)
11/7/11	David Alan Schott	Subpoena in a Civil Matter 2011 L 6182 Circuit Court of Cook County IL	R (dep)
3/2/12	Bucky's Portable Toilets	State Trial Court 10 CV 4120 State of Wisconsin Circuit Court	R (dep) Dane County
5/23/12	Bucky's Portable Toilets	State Trial Court 10 CV 4120 State of Wisconsin Circuit Court	E (trial) Dane County
1/18/13	Murchison Malcolm	1 st Judicial District Court 542470A Parish of Caddo State of Louisiana	R (dep)
5/16/14	Taneka J. Price	State Trial Court 121002289 Philadelphia County, PA	R (dep)
9/11/14	Gerald C. Michels	State Trial Court 10 th Judicial District 58-CV-12-761 State of Minnesota County of Pir	R (dep) ne

09/19/14	Arthur Law (ABS)	State Trial Court Superior Court of CA RG14721226 County of Alameda	R (dep)
11/19/14	Lilian Beauchamp	State Trial Court 19 th Judicial District 2013CA000569 State of Florida St. Lucie County	R (dep)
12/17/14	Carol & Fred Steinger	State Trial Court Superior Court of New Jersey Law Division - Ocean County OCN-L-2320-13	R (dep)
6/19/15	McIntyre Bobby & Sherry	Circuit Court of Kentucky Jefferson County 14-CI-01630	R (dep)
11/5/15	Kidd Annette & Elmer	State Trial Court Superior Court of California County of Los Angeles BC577196	R (dep)
4/8/16	Hutto Jr. James & Ashlyn	Court of Common Pleas SC County of Charleston 14-CP-10-04666	R (dep)
7/29/16	Hayden Thomas & Jacq	Civil District Court for the Parish of Orleans State of Louisiana 2015-3732	R (dep)
8/19/16	Reyes Sandra & Mario	Superior Court of California County of Los Angeles, Central E BC596857	R (dep) District
2/2/17	Parker Raymond & Diane	Superior Court of California County of los Angeles BC588348	R (dep)
2/09/17	Shaw Walter M & Janet	Superior Court of California County of Alameda RG15771646	R (dep)

7/13/17	Chery Jr. Patrick	State of North Carolina Cumberland County 16CVS5859	R (dep)
6/27/17	Michael Leon	Superior Court of NJ Camden County L-3575-15	R (dep)
8/31/17	Robert F. Schucker	rs U.S. District Court Middle District of PA 3:15-CV-2026	R (dep)
9/21/17	Ricky N. Rankin	Circuit Court of TN Hamilton County 16C1147	R (dep)
1/17/18	Galvan Zuhey	District Court of NV Clark County A-15-724639-C	R (dep)
2/7/2018	Raymond Terry	Superior Court of California Los Angeles County BC643288	R (dep)
5/4/2018	Da'Vonric Forge	In the District Court of Dallas County, Texas DC-17-09472	R (dep)
5/9/2018	Galvan Zuhey	District Court of NV Clark County A-15-724639-C	R (Trial)
6/20/18	Bartos Joseph Jr.	In the Court of Common Pleas of Lackawanna County PA 16CV1606	R (dep)
8/23/19	Jeffrey Richard He	nry In the District Court Second Judicial District State of Minnesota County of Ramsey 62CV157775	R (dep)
8/14/20	Guerra Rueben	In the United States District Court For the District of New Mexico 1:18-CV-00321-KG-JFR	W (dep)

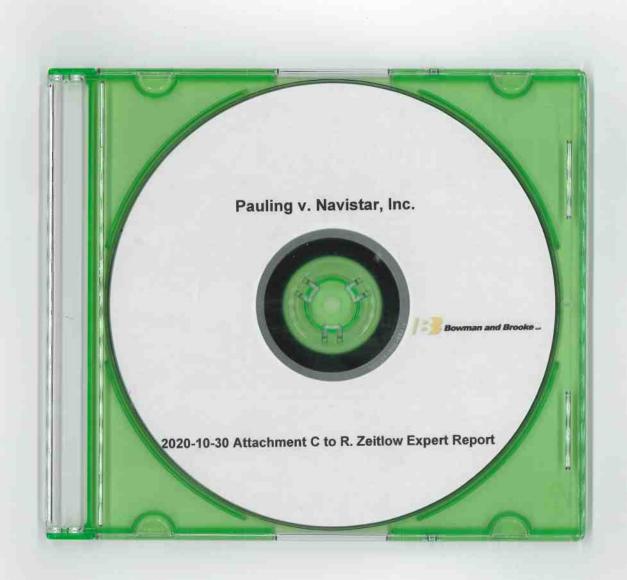
7:19-cv-00206-JD Date Filed 10/30/20 Entry Number 64-1 Page 18 of 30

9/15/20 Michael Pauling

United States District Court In the District of South Carolina Spartanburg Division 7:19-cv-00206-HMH R (dep)

Attachment C

Video of Testing in Separate File



7:19-cv-00206-JD Date Filed 10/30/20 Entry Number 64-1 Page 21 of 30

Attachment D

Line	e Set Ticket						
	Number	3HSDJSJR6 <i>CN655421</i>			R+ 122 6X4		9/14/2011
	g Srl Numbei		Model Code	LF68700		Order Qty	10
	aler Number		Order Number/Suffix			Starting Job Number	
	d To	Boyd Bros	Sales Region	514		Paint Code	9219
GV AF		52350 53.1 in / 135.0 cm	Ignition Key Gear Ratio	Z156 3.25		Wheel Base	242.1 in / 615.0 cm No
			Geal Ratio	3.23		Recall Pending	INU
	<u>Unit</u>	Description	ME DAIL O		Cost Cod	е	
01 01		TAPERED REAR FRA FRAME RAIL 120,000					
		FRT BPR 3PC AERO					
01		SPECIAL FRAME PIE			Yes		
01	0001VAD	🖣 DECK PLATE BRI 2 S	ECT FLUSH MTD				
01	0001WKL	🔍 WHEELBASE RANGE	221" THRU 270"		Yes		
01		FRAME PIERCING BY			Yes		
01		LADDER LEFT FOR B		TDI	Yes		
02		FR AXLE 12.35K HEN SPRING FRONT SUS		IRK			
		TRACTOR DUAL AIR					
	·	16.5"X 5" W/24" L/S C					
04		4 2-ADDL 30/30 HALDE		MBERS	Yes		
04	0004AZY	👊 BENDIX AIR BRK ABS	6 CHANNEL ESP 6S/	6M			
04	0004ECC	AIR DRYER BENDIX	AD-IS				
04		FRT CHAMBERS HAL			Yes		
04		REAR BRAKE CHAME 16.5X7 R S-CAM BRK			Yes		
04		AIR CPRSR 15.9 CFM		13			
		PAINTED ALUM AIR 1			Yes		
04	0004WER	30" EXTRA LENGTH	TRLR CONNECTIONS		Yes		
04	0004WXR	👊 DRAIN VALVE 2 W/PU	JLL CHAINS		Yes		
04		AIR TANK VOLUME I			Yes		
04		TRLR HOSES & CABL		101.44	V		
04 04		🔍 PROG, ABS-6 YAW R 🖏 PROG, ABS-6 SAS CO			Yes Yes		
		ROG, ABS-6 AXLE 6		CIIV	Yes		
04		R/S AUTO-SLACK AD			Yes		
04	0504355	🖣 R/S AUTO-SLACK AD	JSTRS-REAR		Yes		
04		A/D LOC LSM BOC IN			Yes		
		MERITOR Q-PLUS FF			Yes		
04 04		MERITOR Q-PLUS RE MERITOR MA1201 FF			Yes		
04		MERITOR MA2001 RE		•	Yes Yes		
04		LOCATE 2 AIR TANKS					
05	0005710	STRG COL, TILT & TE	ELE		Yes		
05	0005CAW	🖣 STRG WHL BLK 4-SP	K				
05		1-PWR STRG GEAR					
06		DRIVESHAFT SYS SF		-D CAD	Yes		
		ROPSHAFT CODING TRANSMISSION OUT		ER CAB	res		
	· · · · · · · · · · · · · · · · · · ·	FORWARD REAR AX					
06	·	FORWARD REAR AX		KE			
06	0506010	획 REAR REAR AXLE IN	PUT YOKE				
		TRIVELINE LABOR					
		FIRST CENTER BEAF					
	·	CENTER BEARING M EXH SGL HORZ/VER					
	· · · · · · · · · · · · · · · · · · ·	SENG COMPRESSION			Yes		
		1-VERT T/P BRI TURI			Yes		
07	0007WBS	¶ 1-MUFFLER/TAIL PIP	E GD BRIGHT STAINL	ESS	Yes		
07	0007WBU	🔍 TAIL PIPE HEIGHT 11	'6"		Yes		
	·	ELEC SYS (12 VOLT)					
		2-ELECTRIC HORNS	CICAD TYPE DECERT	ACLE)	Yes		
		1-POWER SOURCE (300 AMP 12V ALT DE		AULE)	Yes		
		4 8-12V 5600CCA BTRY					
	·	SINGLE CB ANTENNA					
80	0008RBZ	AUXILIARY CB SPEA	KER		Yes		
		CB RADIO ACCOM PI			Yes		
		SAT COM SYS PEOP			Vec		
		RADIO CONTROL MT AM/FM/WB, CLOCK, (Yes		
		S/T/T & B/U LTS TRU			Yes		
			22. 2				

08	0008TPL	COLLISION MITIGATION SYS BENDIX WINGMAN	
80	0008WCL	1-AIR HORN BLACK	
80 80	0008WJE 0008WNH	WIRING SPECIAL CUSTOMER INSTALL WORK LTG DAYTIME RUNNING LIGHTS	Yes
08	0008WPZ	TEST EXTERIOR LAMPS EXCEPT BACK UPS	Yes
80	0008WRB	HEADLIGHTS ON WITH WIPERS	Yes
80	0008WRG	BATT BOX AL LSM BOFT 2-4 CAP	.,
80 80	0008WRH 0008WRN	■ T/S SIDE MARKER LT AMBER ON SLPR VALANCE ■ AUX BATT BOX ALUM RSM BEHIND TANK	Yes
08	0008WXB	HEADLIGHT WARNING BUZZER	Yes
80	0008WXC	WARNING LIGHT & ALARM PARK BRK	Yes
80	0008WXG	START MOTOR MITSUBISHI 105P	Yes
08 08	0008XAH 0008XEV	MANUAL-RESET CIRC BREAKERS (MAIN PANEL) BATTERY DISCHARGE PROTECTION SYSTEM	Yes
08	0508010	AIR SOLENOID 4-PAK NO ECU OR J1939	
80	0508051	ELECTRICAL SYSTEM MUX FOR BC PROG ONLY	Yes
09	0009505	RR WHL(FRAME MTD)"SS" QUARTER FENDERS	
09	0009HAN	SOUND INSULATION UNDER HOOD LOGOS SHIP PROSTAR BADGES LOOSE IN CAB	Yes
09 09	0009LAL 0009WAY	FRONT END, TILT 3-PIECE	Yes
10	0010133	SINGLE COLOR 133 PT SCHEMATIC	Yes
10	0010210	EMISSION LABELS (FUEL ECONOMY/NOISE)	Yes
10	0010761	PAINT-BASE COAT/CLEAR COAT 1-2 TONE	Yes
10	<u>0010EGH</u>	STA 5TH FONT 6.25" HGT SL6PMA6250	
10	0010NSJ	CUSTOMER IDENTITY FOR BOYD TRANS COMPANY	Yes
10	0010VZY	QUARTER FENDERS LOCATION	Yes
10	0010WBT	WHEELBASE EXCEPTION	Yes
10	0010WPT	MUD FLAP HOLDERS BLACK 45-DEG	
10 10	0010WPY 0035841	MUD FLAPS REAR BLACK PAINT CHASSIS SKIRTS COLOR #1	Yes
10	0040011	■ HEAVY DUTY STD WARRANTY	Yes
10	0040CRY	(M1500E)EXT ENG,ELEC/INJ/TURBO 60/500	Yes
10	<u>0510000</u>	BULK MATERIAL	
10	0510002	SERVICE ASM; CAB, DCM, HARNESS, IP SPECIAL ROUTING CONTROL PDI AT TSC	V
10 10	0510104 0510885	VEPS IDENTITY	Yes Yes
10	0510887	■ YELLOW EXTENDED LIFE COOLANT EFFECTS	Yes
10	0510898	🔍 VEPS PROG, COLLISION WARN DIU	Yes
10	0510924	ENGINEERING PROG ID 2007 REFRESH EFFECTS	Yes
	0510936 0510974	VEPS IDENTITY	Yes
10	0510974	STD SIDENTITY	Yes Yes
10	0535008	PAINT CHASSIS COLOR GROUP NO. 08	
10	0535011	IDENTITY CODE FOR STD PAINT COLORS ONLY	Yes
10	<u>0535911</u>	PAINT COLOR GROUP PT1 NO.1	
10	0595AAC	BC PROG, KEY STATE	Yes
10 10	0595AAD 0595AAE	■ BC PROG, BRAKE SWITCH ■ BC PROG, WNDSHIELD WIPER	Yes Yes
10	0595AAG	© BC PROG, HEADLIGHT W/DRL W/AUTO	Yes
10	0595AAH	BC PROG, LIGHTS ON WWIPERS	Yes
10	0595AAJ	BC PROG, HEADLIGHT REMINDER #1	Yes
10 10	0595AAL 0595AAM	■ BC PROG, TURN SIGNALS/BRAKE ■ BC PROG, PARK LIGHT/MARKER LIGHTS	Yes Yes
10	0595AAN	BC PROG, PARK LIGHT/MARKER LIGHTS BC PROG, MARKER INTERRUPT SWITCH	Yes
10	0595AAS	SC PROG, INTERIOR LIGHTS DOME IN SLEEPER	Yes
10	0595AAT	BC PROG, INTERIOR FLOOR LIGHT IN SLEEPER	Yes
10	0595AAU	BC PROG, HEATED MIRROR ROCKER SW	Yes
10	0595AAV 0595AAZ	BC PROG, ELECTRIC CITY HORN	Yes
10 10	0595AAZ 0595ABA	SC PROG, PARK BRAKE INDICATOR BC PROG, SEATBELT INDICATOR	Yes Yes
10	0595ABB	SC PROG, AIR GAUGES	Yes
10	0595ABC	BC PROG, TRAILER LIGHTING	Yes
10	0595ABD	BC PROG, FUEL TANK GAUGE RT SIDE	Yes
10	0595ABK	BC PROG, ENGINE OIL PRESSURE CAUGE	Yes
10 10	0595ABL 0595ABM	SC PROG, ENGINE OIL PRESSURE GAUGE BC PROG, TACHOMETER 2500 RPM	Yes Yes
10	0595ABN	SC PROG, SPEEDOMETER	Yes
10	0595ABP	BC PROG, VOLTMETER	Yes
10	0595ABR	BC PROG, WORKLIGHT PUSH BUTTON B	Yes
10	0595ABS	BC PROG, WORKLIGHT ON WITH BACKUP	Yes
10 10	0595ABV 0595ABW	■ BC PROG, ABS INDICATOR ■ BC PROG, TRAILER ABS INDICATOR	Yes Yes

10	0595ABX	BC PROG, EXTERIOR LIGHT CHECK PROSTAR	Yes
10	0595ABY	BC PROG, POWER WINDOW/DOOR LOK 2 DOORS	Yes
10 10	0595ACA 0595ACC	■ BC PROG, AIR SUSPENSION DUMP CONTROL ■ BC PROG, AXLE TEMP GAUGE DUAL	Yes Yes
10	0595ACL	S BC PROG, AXEE TEMP GAGGE BOAL S BC PROG, ELECTRICAL LOAD CONTROL	Yes
10	0595ACN	BC PROG, AIR HORN ANALOG INPUT	Yes
10	0595ACW	SC PROG, ENGINE FAN OVERRIDE #1	Yes
10	0595ACZ	BC PROG, POWER DIVIDER LOCK	Yes
10	0595ADA	🖣 BC PROG, BRAKE APPLICATION GAUGE IN SIC	Yes
10	0595ADG	BC PROG, FUEL HEATER	Yes
10	0595ADP	■ BC PROG, CLUTCH SWITCH ■ BC PROG. NO PRNDL MANUAL TRANS	Yes Yes
10 10	0595ADR 0595ADX	BC PROG, NO PRINDL MANUAL TRAINS BC PROG, ENGINE OIL TEMP, ECM #1	Yes
10	0595ADX 0595ADY	BC PROG, ENGINE OIL TEMP, ECM #1	Yes
10	0595AEA	SC PROG, ROLL STABILITY PROG/ELECT PROG	Yes
10	0595AED	BC PROG, BRAKE WARN INDICATOR	Yes
10	0595AGK	BC PROG, FUEL FILTER PLUGGED	Yes
10	0595ANU	BC PROG, ENGINE IDLE INCREMENT/DECREMENT	
10	0595ANV	BC PROG, DIAGNOSTICS NO ON BOARD DISPLAY	Yes
10	0595AYG	BC PROG, ENGINE TYPE INTERNATIONAL HDD	Yes
10 10	0595AYJ 0595AZL	■ BC PROG, CRUISE ON/OFF STEER WHEEL ■ BC PROG, AXLE LOAD MONITOR REAR AXLE	Yes Yes
10	0595AZL 0595BBM	BC PROG, AXLE EGAD MONITOR REAR AXLE	Yes
10	0595BJB	BC PROG, WAIT TO START 2010 CLUSTER	Yes
10	0595BJC	BC PROG, IND. FILTER CLOG 2010 CLUSTER	Yes
10	0595BJD	BC PROG, EXH HI TEMP ID 2010 CLUSTER	Yes
10	0595BJJ	BC PROG, PARK REGEN SW 2010 CLUSTER	Yes
10	0595BJL	BC PROG, TRACT CONTROL IND 2010 CLUSTER	Yes
10	0595BJM	BC PROG, IP CONFIG PROSTAR/LONESTAR 2010	Yes
10 10	0595BKD 0595BKM	SC PROG, BODY CONTROLLER FOR TRUCK 2 SC BC PROG, ENGINE RETARDER 2010 CLUSTER	Yes Yes
10	0595BKW	BC PROG, ENGINE RETARDER 2010 CLOSTER BC PROG, IDLE MGT HEAT/HVAC BERGSTROM	Yes
10	0595BMB	BC PROG, HVAC IN SLEEPER & CAB	Yes
10	0595BMW	BC PROG, UPSHIFT IND LIGHT	Yes
10	0595BNY	🖣 BC PROG, ENGINE FAN IND. LIGHT & BUZZER	Yes
10	0595BPB	BC PROG, ENGINE FAN DRIVE VARIABLE SPEED	Yes
10	0595BRZ	BC PROG, ENGINE PARAMETERS	Yes
10	0810002	5TH WHL 02" AHEAD OF RR AXLE CENTERLINE	Yes
11 11	0011MGR 0011WAJ	CLUTCH 15.5" EATON SOLO ADVANTAGE CLUTCH EFFECTS HYDRAULIC SYSTEM	
12	0011WA3	MAXXFORCE 13 MULTI TORQUE 430HP/1900 GOV	
12	0012THX	FAN DRIVE VISCOUS HORTON V-MASTER-ULTRA	
12	0012UBE	RAD 1429" CAC 764.1 LTR 1123.3	
12	0012UXH	2010 FEDERAL EMISSIONS MAXXFORCE 13	Yes
12	0012VBC	AIR CLNR SINGLE ELEMENT	
12	0012WBR	MANUAL FAN DRIVE OVERRIDE	Yes
12 12	0012WCX	HOSE CLAMPS GATES SHRINK BAND	Yes
12		AUTO COLD START WENGINE ECM CONTROL ELEC DATA LINK TRANS CONTROL MF 11/13/15	Yes
12	0012WTA	FAN DRIVE SPECIAL EFFECTS COOLING RING	
	0012WZE	_	Yes
12	0512042	OIL FILTER ENGINE AUXILIARY FRAME MTD	
	0013GHS		
13	0013WAS	ALUMINUM CLUTCH HOUSING	Yes
13	0013WGJ	OIL CLR MAN XMSN WATER TO OIL	
	0013WLB 0014899	■ TRANS OIL-SAE 50W SYNTHETIC ■ HTG CNTRL AIR SUSPN//DUMP	Yes
	0014699 0014GXA	TAN RA 40K R WE MTOR MT-40-14X-3CFR	165
14	0014UNU	TAN RAS 40K 52" INTL IROS	
	0014WLD	REAR AXLE OIL 75W-90 SYNTH EMGARD	Yes
14	0514007	🖳 SEATS & PLATES FWD REAR	
	<u>0514008</u>	SEATS & PLATES REAR REAR	
	0015DPP	2-FL TK UC AL 100G LT/RT 26"DIA	
15	0015LLA	FUELWATER SEPARATOR DAVCO 382	Va-
15 15	0015WHD 0015WHL	ANTI-SIPHON FOR DUAL FUEL TANKS(2) FUEL SHUT-OFF VALVES FRAME MTG	Yes Yes
	0515009	FUEL TANK CAPS (2) NON-LOCKING TYPE	Yes
	0016000	TRANS COVER, FLOOR MATS, SEALS	. 50
	0016AUN	CAB SLEEPER 73" HI-RISE	
16	0016DAB	INTERIOR TRIM ACCENT COLOR DARK NEUTRAL	Yes
		ENGLISH GA CLUSTER WIVORY FACE	
16	0016HGG		Yes
16	0016HGJ	TEMP GAUGE OIL MANUAL TRANS	Yes

7:19-cv-00206-JD Date Filed 10/30/20 Entry Number 64-1

16 0016HGN 🔍 AIR APPLICATION GAUGE Yes 16 0016HKE 📮 LOAD GAUGE REAR SUSP W/TEXT MESSAGE Yes 16 0016HKR 🔍 WINDOW, WING VENT FIXED 16 0016LEP APASSENGER SEAT NAT'L DRIVER SEAT NAT'L 16 <u>0016LJN</u> 16 0016SBU 🖣 42" LOWER BUNK FLIP UP Yes 16 0016SCL 30" UPPER BUNK W/FOAM MATTRESS 16 <u>0016SDZ</u> 🖣 MIRROR, HOOD RT/LT BRI 16 <u>0016SKX</u> **Q** 2-MIRRORS PWR/HEAT/LED/PAINTED HEADS 16 <u>0016UZL</u> NO IDLE BATTERY POWERED HVAC 16 <u>0016VCJ</u> SATELLITE ANTENNA MOUNTING BRACKETS 16 <u>0016VCK</u> CABINET REFRIGERATOR 16 0016VRX Qurtain Sleeper insulated thermal/noise Yes 16 0016VRY INSULATION PAK FOR SLEEPER COMPARTMENT Yes 16 0016VSZ QCAB INT TRIM PREMIUM 73" HI-RISE WINDSHIELD PRIVACY CURTAIN 16 <u>0016WCT</u> AIR CONDITIONER & HEATER 16 <u>0016WDE</u> TV ANTENNA 16 <u>0016WJU</u> **Q** 2-POWER WINDOWS/DOOR LOCKS 16 0016WYV CAB SIDE EXTEND CONVENTIONAL SLEEPER CAB 16 0016XRU CHAS SKT CAB LG 73" SLEEPER CAB PAINTED 16 <u>0016XWV</u> **Q** EXTERIOR SUNSHADE PAINTED AERO 16 <u>0016XXV</u> CABINET TOWER WARDROBE BEHIND DRIVER 16 <u>0016ZGR</u> CAB/FRAME ACCESS BRI DAY/SLPR CAB 16 <u>0516027</u> CAB DRILLING FOR QUALCOMM/PEOPLENET SYS 16 <u>0516065</u> CAB DRILLING FOR WIRING UPPER WORK LIGHT 16 0516082 CAB DRILLING 16 <u>0516086</u> CAB DRILLING 16 0516101 MIRROR, HEATED ALL HEADS Yes 16 0516102 MIRROR, POWERED Yes MIRROR, CLEARANCE LIGHTS 16 0516103 Yes 16 0516106 MIRROR STYLE AERO 2-CABINET OVERHEAD 1RT/1LT SIDE W/NET 16 0516139 16 <u>0516143</u> SLEEPER INTERIOR STORAGE MTD ON R/PANEL 0029WLG 🔍 SPECIAL RR WHL BEARING NUTS SGL DISC RR WHL 22.5X14.00 AL 17 0032DJN LUBE FRT WHL BEARINGS 17 <u>0529001</u> LUBE REAR WHL BEARINGS 17 0529002 0530100 TIRES

Paint Control Code	Paint Schematic	Paint Location	Paint Break Code	Paint Color Code	Paint Description
1	133HR	S	01	9219	WHITE

Explanation of Prop Shaft Locations

Prop Code	Qty	Location
0217LYB1190	1	4
0425LTA1780	1	1
0425LTH1230	1	3

Front Tire Rear Tire		Non Driving Tire		Pusher Tire		Tag Tire			
Code	Qty	Code	Qty	Code	Qty	Code	Qty	Code	Qty
07702498116	2	07682683211	4						

	Front	Rear
Suitable Tire	295/75R22.5G	295/75R22.5G
Suitable Rim	22.5X8.25	22.5X8.25
F	ront Rear Pu	sher Tag
Actual Tire		
Actual Rim		

	GVWR	FRONT	FRREAR	REAR-RR	Pusher	Tag
AXLE-BRK						
SPRNG-AUX						
TIRE-RIM						
GAWR-LBS						
GAWR-KGS						

Line Set Ticket 3HSDJSNR8GN003495 Model PROSTAR+ 122 6X4 Build Date 3/30/2015 Model Code LF68700 Eng Srl Number 2Y4401156 Order Otv Starting Job Number 003492 Dealer Number 633065 Order Number/Suffix 125051 COWAN SYSTEMS INC. Sales Region Sold To 139 **Paint Code** 5B20 50350 Ignition Key Z250 Wheel Base 214.6 in / 545.0 cm AF Dimension 53.1 in / 135.0 cm Gear Ratio 3.08 Recall Pending Nο **Cost Code** Description Grp Unit 01 0001570 TWO FRONT TOW HOOKS 0001616 TAPERED REAR FRAME RAILS 01 0001CBV FRAME RAIL 120,000 PSI YIELD 367.4" OAL 01 0001LRL 🖳 FRT BPR 3PC AERO PLSTC MOLDED DARK GRAY DECK PLATE BRI 2 SECT FLUSH MTD 01 0001VAD 0001WKK WHEELBASE RANGE 187" THRU 219" 01 FRAME PIERCING BY OUTSIDE VENDOR 01 0501007 Yes LADDER LEFT FOR BOC ACCESS 0501013 02 0002AHJ FR AXLE 12.35K DANA E-1202W W-TRK 0003AHN SPRING FRONT SUSP 12.35K 03 TRACTOR DUAL AIR BRAKE SYSTEM 04 0004092 0004196 4 16.5"X 5" W/24" L/S CHAMBERS TRLR HOSES & CABLES 14' STRAIGHT 04 0004803 0004809 HOSE TENDER SLIDE BAR DBL SPR BRKT 2-ADDL 30/30 HALDEX PARK BRAKE CHAMBERS 04 0004AAB AIR BRK ABS BENDIX 6-CHAN ESP ATC 0004AZY AIR DRYER BENDIX AD-IS 04 0004ECC **24 SQIN FR BK CHMBR HALDEX** Yes 0004FVI 30/30 RR BK CHMBR HALDEX GC3030LHDHO Yes 04 <u>0004NDB</u> **16.5X7** R S-CAM BRKS 30/30 L/S CHAMBERS 04 0004SPM AIR CPRSR 15.9 CFM BENDIX BA-921 0004VGM R POL-ALUM AIR TANK Yes 0004VHW | LOCATE 2 AIR TANKS 0004WDM REAR DUST SHIELDS AIR CAM BRAKES Yes 04 0004WDV 🖣 HAND CONTROL VALVE TRLR BRAKES/RETURN Yes 0004WXR 📮 DRAIN VALVE 2 W/PULL CHAINS Yes 🔍 AIR TANK VOLUME ID NOMINAL 6054 0504058 Yes 04 0504112 ROG, ABS-6 YAW RATE SENS ORIENTATION #1 Yes PROG, ABS-6 SAS CONF STEER / SENSOR INV 04 0504149 04 0504175 RPROG. ABS-6 AXLE 6X4 TRACTOR Yes R/S AUTO-SLACK ADJSTRS-FRONT 0504306 04 0504355 R/S AUTO-SLACK ADJSTRS-REAR Yes A/D LOC LSM BOC INSIDE RAIL 04 0504441 MERITOR Q-PLUS FRONT BRAKE Yes MERITOR Q-PLUS REAR BRAKE 04 0504501 MERITOR MA1201 FRONT BRAKE LININGS Yes MERITOR MA2001 REAR BRAKE LININGS Yes 05 0005710 STRG COL. TILT & TELE Yes 0005CAW STRG WHL BLK 4-SPK 05 05 0005PRP 1-PWR STRG GEAR TRW ROSS PCF60 NOTIFIED PROPERTY OF THE PROPE Yes 06 0006DAW 📮 DRIVESHAFT SYS SPL250XL/SPL170XL Yes 0006WAH 🔍 PROPSHAFT CODING FOR 51/56" SLEEPER CAB 06 Yes 06 0506001 TRANSMISSION OUTPUT YOKE FORWARD REAR AXLE INPUT YOKE 06 0506007 06 0506008 FORWARD REAR AXLE REAR OUTPUT YOKE 06 0506010 REAR REAR AXLE INPUT YOKE 06 0506100 DRIVELINE LABOR 0506101 NO CENTER BEARING 06 Yes 06 0506110 **Q** CENTER BEARING MOUNTING PARTS 07 0007BEN 0007BEU 🔍 AFTERTREATMENT COVER ALUMINUM 07 Yes 07 0007SDK ENGINE COMPRESSION BRAKE FOR N13/A26 ENG Yes 07 0507010 4 1-HORIZ T/P SHORT WITH DIFFUSER 08 0008000 ELEC SYS (12 VOLT) ¶ 1-POWER SOURCE (CIGAR-TYPE RECEPTACLE) 08 0008718 0008GHH 200 AMP 12V ALT BOSCH LIL200 80 80 0008NBJ 4-12V 2800CCA BTRY SYS-JCI 08 <u>0008RBK</u> **Q** DUAL CB ANTENNAS 80 0008RBZ **AUXILIARY CB SPEAKER** Yes CB RADIO ACCOM PKG/HEADER 08 0008RCB Yes 0008RJG RADIO CONTROL MTD SLEEPER 08 0008RMC AM/FM/CD/WB/SXM/CLK/BT/USB/AUX/MP3/AP DV 0008THB BACK UP ALARM 102 DBA ELECTRIC

80	0008TKJ	S/T/T & B/U LTS TRUCK-LITE SUPER 44	Yes
80	0008WBW	1-JUMP START STUD TERMINAL (REMOTE MTD)	Yes
80	0008WCL	1-AIR HORN BLACK	V
80 80	0008WGU 0008WJN	BATTERY BOX COVER ALUMINUM BATT BOX AL LSM UC 2-4 CAP	Yes
08	0008WLN	2-FOG LIGHTS PETERSON CLEAR HALOGEN	Yes
08	HAW8000	DAYTIME RUNNING LIGHTS	Yes
08	0008WPZ	TEST EXTERIOR LAMPS EXCEPT BACK UPS	Yes
80	0008WRB	HEADLIGHTS ON WITH WIPERS	Yes
80	0008WXB	HEADLIGHT WARNING BUZZER	Yes
80	0008WXG	START MOTOR MITSUBISHI 105P	Yes
80	HAX8000	MANUAL-RESET CIRC BREAKERS (MAIN PANEL)	Yes
80	0008XDP	HEADLIGHTS HALOGEN W/PARK/DRL	Yes
80	0008XEV	BATTERY DISCHARGE PROTECTION SYSTEM	
80	0508025 0508051	AIR SOLENOID & PAK NO ECU OR J1939 ELECTRICAL SYSTEM MUX FOR BC PROG ONLY	Yes
08	0508091	FUSE PANEL	Yes
09	0009HAN	SOUND INSULATION UNDER HOOD	Yes
09	0009WAY	FRONT END, TILT 3-PIECE	. 00
09	0009WBN	FENDER EXTENSIONS PAINTED	Yes
10	0010131	SINGLE COLOR 131 PT SCHEMATIC	Yes
10	0010210	EMISSION LABELS (FUEL ECONOMY/NOISE)	Yes
10	0010761	A PAINT-BASE COAT/CLEAR COAT 1-2 TONE	Yes
10	0010769	REMIUM COLOR PAINT	Yes
10	0010935	ALL KEYS ALIKE INCL SLPR	Yes
10	0010HHA	A/S 5TH JOST 24" SLD JSK36NSL-A7PX24	.,
10 10	0010WBA 0010WCY	■ ALL KEYS ALIKE Z-250 ■ SAFETY TRIANGLES	Yes
10	0010WC1	MUD FLAP HOLDERS BETTS B-35 45-DEG	
10	0010WSJ	MUD FLAPS REAR BLACK	
10	0010WTR	RR QTR FENDERS (BLK PLASTIC)(FRAME MTD)	
10	0035864	PAINT FENDER EXTENSIONS	Yes
10	0040113	WARRANTY STD CTS-2004	Yes
10	0040KMB	(T4101C) TOW SERVICE \$550 MAX 36/UNLIMIT	Yes
10	0040KSM	(29301E) SRV CTR EXT VEH COVER 36/350K	Yes
10	0040KWD	(D3000L)SRV CONT EXT AFTR 36/350	Yes
10	0040LCZ	(N6000L)EXT ENG,ELEC/INJ/TURBO 36/350	Yes
10	0510000	BULK MATERIAL	
10	<u>0510002</u>	SERVICE ASM; CAB, DCM, HARNESS, IP SPECIAL ROUTING CONTROL PDI AT TSC	Voo
10 10	0510104 0510112	SPECIAL ROUTING CONTROL PDI AT TSC	Yes Yes
10	0510112	VEPS IDENTITY ACM	Yes
	0510885	■ VEPS IDENTITY	Yes
10	0510887	YELLOW EXTENDED LIFE COOLANT EFFECTS	Yes
10	0510924	IN ENGINEERING PROG ID 2007 REFRESH EFFECTS	Yes
10	0510936	■ VEPS IDENTITY	Yes
10	0510974	ENGINEERING PROG ID 2010 EMISSIONS STD	Yes
10	0510993	VEPS IDENTITY	Yes
10	0510AAA	ENGINEERING PROG ID POST SCR ENG UPGRADE	Yes
10	0535008	PAINT CHASSIS COLOR GROUP NO. 08	
10	0535913	PAINT COLOR GROUP PT1 NO.3	
10	0595AAC	BC PROG, KEY STATE	Yes
10	0595AAD	SC PROG, BRAKE SWITCH	Yes
10	0595AAE	RECURION BY BELLIN BELL	Yes
10	0595AAG	BC PROG, HEADLIGHT W/DRL W/AUTO	Yes
10	0595AAH	BC PROG, LIGHTS ON W/WIPERS	Yes
10	0595AAJ	BC PROG, HEADLIGHT REMINDER #1	Yes
10	0595AAL	BC PROG, TURN SIGNALS/BRAKE	Yes
10 10	0595AAM 0595AAN	■ BC PROG, PARK LIGHT/MARKER LIGHTS ■ BC PROG, MARKER INTERRUPT SWITCH	Yes Yes
10	0595AAN 0595AAS	BC PROG, MARKER INTERROFT SWITCH BC PROG, INTERIOR LIGHTS DOME IN SLEEPER	Yes
10	0595AAS 0595AAT	BC PROG, INTERIOR EIGHT'S DOME IN SLEEPER BC PROG, INTERIOR FLOOR LIGHT IN SLEEPER	Yes
10	0595AAU	© BC PROG, HEATED MIRROR ROCKER SW	Yes
10	0595AAV	S BC PROG, ELECTRIC CITY HORN	Yes
10	0595AAZ	SC PROG, PARK BRAKE INDICATOR	Yes
10	0595ABA	BC PROG, SEATBELT INDICATOR	Yes
10	0595ABB	■ BC PROG, AIR GAUGES	Yes
10	0595ABC	BC PROG, TRAILER LIGHTING	Yes
10	0595ABD	BC PROG, FUEL TANK GAUGE RT SIDE	Yes
10	0595ABK	BC PROG, ENGINE OF PRESSURE CALLOR	Yes
10	0595ABL	BC PROG, ENGINE OIL PRESSURE GAUGE	Yes
10	0595ABM	BC PROG, TACHOMETER 2500 RPM	Yes

		_	
10	0595ABN	BC PROG, SPEEDOMETER	Yes
10	0595ABP	BC PROG, VOLTMETER	Yes
10	0595ABR	SC PROG, WORKLIGHT PUSH BUTTON B	Yes
10	0595ABV	BC PROG, ABS INDICATOR	Yes
10	0595ABW	RECEIVED BY STANFOR BY BE STANFORD BY BE PROGUED BY BE STANFORD BY BY BE STANFORD BY BE STANFORD BY BE STANFORD BY BE STANFORD BY BY BE STANFORD BY BY BE STANFORD BY	Yes
10	0595ABX	BC PROG, EXTERIOR LIGHT CHECK PROSTAR	Yes
10	0595ABY	BC PROG, POWER WINDOW/DOOR LOK 2 DOORS	Yes
10	0595ACA	BC PROG, AIR SUSPENSION DUMP CONTROL	Yes
10	0595ACC	SC PROG, AXLE TEMP GAUGE DUAL	Yes
10	0595ACE	BC PROG, FOG LIGHTS ROCKER SWITCH	Yes
10	0595ACL	BC PROG, ELECTRICAL LOAD CONTROL	Yes
10	0595ACN	BC PROG, AIR HORN ANALOG INPUT	Yes
10	0595ACV	BC PROG, ENGINE AIR INTAKE MONITOR	Yes
10	0595ACY	BC PROG, FIFTH WHEEL SLIDE	Yes
10	0595ACZ	BC PROG, POWER DIVIDER LOCK	Yes
10	0595ADP	BC PROG, CLUTCH SWITCH	Yes
10	0595ADR	BC PROG, NO PRNDL MANUAL TRANS	Yes
10	0595AEA	BC PROG, ROLL STABILITY PROG/ELECT PROG	Yes
10	0595AGK	BC PROG, FUEL FILTER PLUGGED	Yes
10	0595AJE	BC PROG, OMIT WORK LIGHTS	Yes
10	0595ANU	SC PROG, ENGINE IDLE INCREMENT/DECREMENT	
10	0595ANW	BC PROG, DIAGNOSTICS DISPLAY IN CLUSTER	Yes
10	0595AYG	BC PROG, ENGINE TYPE INTERNATIONAL HDD	Yes
10	0595AYJ	BC PROG, CRUISE ON/OFF STEER WHEEL	Yes
10	0595AZL	BC PROG, AXLE LOAD MONITOR REAR AXLE	Yes
10	0595BBB	BC PROG, AXEE EOAD MONITOR REAR AXEE	Yes
		BC PROG, IDLE SHUTDOWN 2010 CLUSTER	Yes
10	0595BBM		
10	0595BJB	■ BC PROG, WAIT TO START 2010 CLUSTER ■ BC PROG, IND. FILTER CLOG 2010 CLUSTER	Yes
10	0595BJC		Yes
10	0595BJD	BC PROG, EXH HI TEMP ID 2010 CLUSTER	Yes
10	0595BJJ	S PROBLEM TRACE CONTROL IND 2010 CLUSTER	Yes
10	0595BJL	BC PROG, TRACT CONTROL IND 2010 CLUSTER	Yes
10	0595BJM	BC PROG,IP CONFIG PROSTAR/LONESTAR 2010	Yes
10	0595BKD	BC PROG, BODY CONTROLLER FOR TRUCK 2	Yes
10	0595BKM	BC PROG, ENGINE RETARDER 2010 CLUSTER	Yes
10	0595BMW	BC PROG, UPSHIFT IND LIGHT	Yes
10	0595BRZ	BC PROG, ENGINE PARAMETERS	Yes
10	0595BTH	BC PROG, OUTSIDE TEMP MONITOR	Yes
10	0595BVC	BC PROG, COMPLIANCE OPR UPDATE	Yes
10	0595BVZ	BC PROG, DEF GAUGE & INDICATOR	Yes
10	0595BWZ	SC PROG, HVAC IN SLPR & CAB 2010	Yes
10	0810000	1 5TH WHL ON RR AXLE CENTERLINE	Yes
11	<u>0011MGR</u>	CLUTCH 15.5" EATON SOLO ADVANTAGE	
11	<u>0011WAJ</u>	CLUTCH EFFECTS HYDRAULIC SYSTEM	
12	0012864	Series ENG BLOCK HTR 120V/1500W	
12	0012BDC	NAV N13 MT SCR 450HP/1900 GOV	
12	0012THT	🖣 FAN DRIVE HORTON (DRIVEMASTER 2SPD)	
12	0012UBE	RAD 1429" CAC 764.1 LTR 1123.3	
12	0012UNC	4 2015 FEDERAL EMISSIONS FOR N13 ENGINES	Yes
12	0012VBC	AIR CLNR SINGLE ELEMENT	
12	0012WCG	NOSE CLAMPS(MINI FLEX SEAL)TYPE	Yes
12	0012WEG	AUTO COLD START W/ENGINE ECM CONTROL	Yes
12	0012WZB	LOW NOX IDLE ENG CA COMPLY W/HOOD DECAL	Yes
13	0013GXV	EATON ADVANTAGE FAOM-15810C 10SPD	
13	0013WAS	ALUMINUM CLUTCH HOUSING	Yes
13	0013WLA	TRANS OIL-SAE 50W SYNTHETIC	
14	0014899	THE COURT HE SUSPNI/DUMP	Yes
14	0014GEP	TAN RA 40K 200 WE DANA DS405/RS405	
14	<u>0014UNU</u>	TAN RAS 40K 52" INTL IROS	
14	0014WMJ	REAR AXLE OIL FE-75W-90 SYNTH EMGARD	Yes
14	0514007	SEATS & PLATES FWD REAR	
14	0514008	SEATS & PLATES REAR REAR	
15	0015DVW	📮 2-FL TK US AL 100G LT/RT 26"DIA	
15	0015LKW	■ FUEL/WATER SEPARATOR DAVCO 382	
15	0015WDD	DEF TANK 23 GAL FR MTD LT SIDE UC	
15	0515009	FUEL TANK CAPS (2) NON-LOCKING TYPE	Yes
16	0016000	XMSN COVER, FLOOR MATS, SEALS	
16	0016564	HEATER SHUT-OFF VALVE(1)BALL VALVE TYPE	Yes
16	0016AUM	CAB SLEEPER 56" HI-RISE	
16	0016DAB	INTERIOR TRIM ACCENT COLOR DARK NEUTRAL	Yes
16	0016GCP	ENGLISH GA CLUSTER W/BLACK FACE	
		GAUGE AMBIENT TEMP SNSR DSPL MTG	Vac
16	0016HCS	CLUSTER	Yes

16	0016HGL	OIL TEMPERATURE GAUGE (REAR AXLE)	
16	0016HKC	AIR CLNR GA FLEETGRD UNDER HOOD CLNR MTD	Yes
16	0016HKE	LOAD GAUGE REAR SUSP W/TEXT MESSAGE	Yes
16	0016HKS	MNDOW, WNG VENT MOVEABLE	Yes
16	0016HKT	IP CLUSTER DISPLAY DIAGNOSTICS	Yes
16	0016HLJ	GAUGE, DEF FLUID LEVEL	Yes
16	0016JYP	DRIVER SEAT NAT'L	
16	0016RAE	PASSENGER SEAT NAT'L	
16	0016SAJ	FAN IN SLEEPER BUNK AREA	
16	0016SDG	LOOK DOWN MIRROR RT BRI	Yes
16	0016SDZ	MIRROR, HOOD RT/LT BRI	
16	0016SLC	2-MIRRORS PWR/HEAT/LED/BRIGHT HEADS	
16	0016UKL	MIRROR BRACKETS BRIGHT BOTH SIDES	
16	0016VCC	SEAT BELTS, ALL ORANGE 1-3	Yes
16	0016VHN	SECURITY BOX(1)UNDER LOWER BUNK	Yes
16	0016VRY	INSULATION PAK FOR SLEEPER COMPARTMENT	Yes
16	0016VTD	CAB INT TRIM PREMIUM 56" HI-RISE	
16	0016VZT	WINDSHIELD PRIVACY CURTAIN	
16	0016WCT	AIR CONDITIONER & HEATER	
16	0016WDE	TV ANTENNA	
16	0016WDG	MATTRESS (DELUXE) INNER SPRING	Yes
16	0016WJU	2-POWER WINDOWS/DOOR LOCKS	
16	0016WSE	LOW W/S WASHER FLUID INDICATOR	Yes
16	0016XWV	EXTERIOR SUNSHADE PAINTED AERO	
16	0016XXR	CABINET OVERHEAD 1RT/1LT SIDE W/NET	
16	0016XYC	🖣 AERO PKG 51"/56" HI-RISE SLPR CAB	
16	0016ZGR	CAB/FRAME ACCESS BRI DAY/SLPR CAB	
16	0516101	MIRROR, HEATED ALL HEADS	Yes
16	0516102	MIRROR, POWERED	Yes
16	0516103	MIRROR, CLEARANCE LIGHTS	Yes
16	0516106	MIRROR STYLE AERO	Yes
16	<u>0516161</u>	CAB DRILLING FOR HANGING STORAGE	
17	0027DME	DISC FR WHL 22.5X8.25 AL	
17	0029331	MOTOR WHEEL CENTRIFUSE BRAKE DRUMS (FRT)	Yes
17	0029334	MOTOR WHEEL CENTRIFUSE BRK DRUMS (RR)	Yes
17	0029WLA	50W SYNTHETIC OIL FRT WHL BEARINGS	Yes
17	0029WLG	SPECIAL RR WHL BEARING NUTS	Yes
17	0032DHZ	SGL DISC RR WHL 22.5X14.00 AL	
17	0529001	LUBE FRT WHL BEARINGS	
17	0529002	LUBE REAR WHL BEARINGS	
17	0530100	TIRES	

Paint Control Co	ode Paint Schematic	Paint Location	Paint Break Code	Paint Color Code	Paint Description
1	131HR	s	01	5B20	MEDIUM GREEN MET

Explanation of Prop Shaft Locations

Prop Code	Qty	Location
0417LTG0565	1	4
0425LTB1385	1	1
0425LTH1000	1	3

Front Tire	,	Rear Tire		Non Drivii	ng Tire	Pusher	Tire	Tag T	ire
Code	Qty	Code	Qty	Code	Qty	Code	Qty	Code	Qty
07702499045	2	07782689057	4						

	Front	Rear		
Suitable Tire	295/75R22.5G	265/75R22.5G		
Suitable Rim	22.5X8.25	22.5X7.50		
	Front Rear Pu	sher Tag		
Actual Tire				
Actual Rim				

	GVWR	FRONT	FRREAR	REAR-RR	Pusher	Tag
AXLE-BRK						
SPRNG-AUX						
TIRE-RIM						
GAWR-LBS						

Chassis Search Page 5 of 5 7:19-cv-00206-JD Date Filed 10/30/20 Entry Number 64-1 Page 30 of 30

GAWR-KGS | | | | | |